

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Initially, applicants note that an Information Disclosure Statement (IDS) was filed with the original application papers on June 21, 2000. At this time that properly filed IDS has not been acknowledged as considered. Applicants respectfully request confirmation of consideration of that IDS. Also, for convenience a copy of that filed IDS and the date-stamped filing receipt indicating its filing are submitted herewith.

The specification is amended by the present response to correct minor informalities. The changes made to the specification are deemed to be self-evident from the original disclosure, and thus are not deemed to raise any issues of new matter.

Claims 1-11 are pending in this application. Claims 1, 2, 10, and 11 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. patent 5,742,927 to Crozier et al. (herein “Crozier”). Claim 3 was rejected under 35 U.S.C. § 103(a) as unpatentable over Crozier as applied to claim 2, in view of U.S. patent 6,477,489 to Lockwood et al. (herein “Lockwood”). Claims 4 and 8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Crozier as applied to claim 1, in view of U.S. patent 5,668,927 to Chan et al. (herein “Chan”). Claim 5 was rejected under 35 U.S.C. § 103(a) as unpatentable over Crozier and further in view of Lockwood. Claims 6 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Crozier as applied to claim 2, in view of Chan. Claim 7 was rejected under 35 U.S.C. § 103(a) as unpatentable over Crozier as applied to claim 6, and further in view of Lockwood.

Addressing each of the above-noted rejections, each of the rejections is traversed by the present response.

Applicants initially note independent claims 1, 10, and 11 are amended by the present response to clarify features recited therein. Specifically, independent claim 1 now recites that the noise-likeness analyzing unit “performs linear predictive analysis and correlation analysis

on the input signal including the object signal and the noise mixed therein, and determines the noise-likeness of the input signal frame.” Independent claims 10 and 11 now recite a similar feature. Independent claims 10 and 11 also further recite that “the determining unit determines the noise amplitude spectrum from the noise-likeness of the input signal”. The above-noted features clarified in independent claims 1, 10, and 11 are believed to clearly distinguish over the applied art to Crozier.

In the claims as currently written noise-likeness is calculated by a noise-likeness analyzing unit that performs linear predictive analysis and correlation analysis on the input signal including the object signal and the noise mixed therein. Such a calculation can be on the basis of a positive peak value, a power of a low pass residual signal, and a power in all over the frequency region of a signal of a present frame. Such subject matter is also discussed in the present specification as a non-limiting example at page 11, line 10 to page 12, line 22.

In contrast to amended independent claims 1, 10, and 11 as currently written, in Crozier a noise spectrum is estimated, not calculated, during periods when no speech is present in an input signal, as clearly disclosed in Crozier at column 3, lines 8-21.

That is, Crozier discloses a noise reduction apparatus that utilizes a speech detector 5 that produces a control signal C when no speech is present in an input signal. The production of that control signal C permits updating of a store 6 when speech is absent from a current segment.¹ The outstanding rejection cites the speech detector 5 and the noise spectrum store 6 in Crozier to correspond to the claimed “noise-likeness analyzing unit” and “noise amplitude spectrum calculation unit”.²

¹ Crozier at column 3, lines 10-15.

² Office Action of July 9, 2004, page 2, prenumbered paragraph 2, lines 8-12.

Applicants note the “noise-likeness analyzing unit” and “unit for analyzing noise-likeness” clarified in the claims operate differently than the speech detector 5 and noise spectrum store 6 in Crozier.

In such ways, applicants respectfully submit that amended independent claims 1, 10, and 11, and the claims dependent therefrom, patentably distinguish over the teaching in Crozier.

Moreover, no teachings in Lockwood or Chan are cited to meet the above-noted features in the claimed invention, and the teachings in Lockwood and Chan are not believed to overcome the above-noted deficiencies in Crozier.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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Dept.: PP/JF

By: MJS/slc

OSMM&N File No. 193176US2

Serial No. New Application

In the matter of the Application of: Satoru FURUTA

For: NOISE SUPPRESSION APPARATUS

The following has been received in the U.S. Patent Office on the date stamped hereon:

- ☒ 53 pp. Specification & 9 Claims/Drawings 10 Sheets (Formals)
- ☒ Combined Declaration, Petition & Power of Attorney 3 pages
- ☐ List of Inventor's Name and Address
- ☒ Utility Patent Application ☐ CPA
- ☒ Notice of Priority ☒ Priority Doc (1)
- ☒ Check for \$690.00 ☒ Dep. Acct. Order Form
- ☒ Fee Transmittal Form
- ☐ Assignment/PTO 1595 pages:
- ☐ Letter to Official Draftsman
- ☐ Letter Requesting Approval of Drawing Changes
- ☐ Drawings sheets ☐ Formal
- ☐ Letter
- ☐ Amendment
- ☒ Information Disclosure Statement ☒ PTO-1449
- ☒ Cited References (4)
- ☐ Search Report
- ☒ Statement of Relevancy
- ☒ List of Related Cases
- ☐ Restriction Response ☐ Election Response
- ☐ Rule 132 Declaration
- ☐ Petition for Extension of Time
- ☐ Notice of Appeal
- ☐ Brief
- ☐ Issue Fee Transmittal
- ☒ White Advance Serial Number Card
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Due Date: 11/10/00